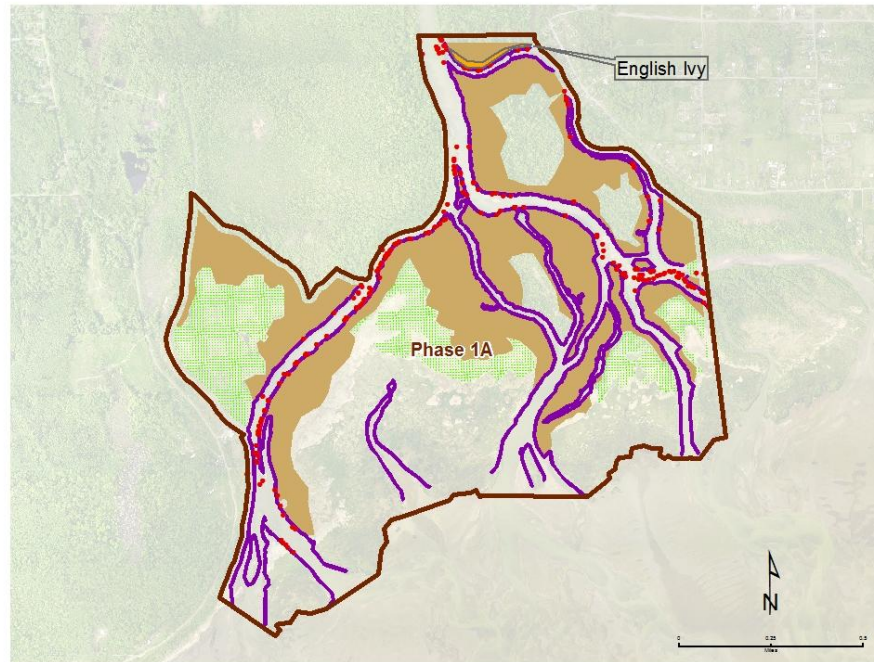


**Lummi Nation Wetland and Habitat Mitigation Bank
2013 (Year 1) Monitoring Report for 2012 Enhancement Areas
Phase 1A Nooksack Delta Site**



Prepared For:

Interagency Review Team
Lummi Nation Wetland and Habitat Mitigation Bank

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EXECUTIVE SUMMARY

Summary of Year 1 Monitoring Activities of 2012 Enhancements	
Name of Mitigation Bank	Lummi Nation Wetland and Habitat Mitigation Bank
Bank Phase	Phase 1A
U.S. Army Corps of Engineers Reference Number	NWS-2008-1519-SO
Bank Sponsor	Lummi Natural Resources Department
Project Lead	Jeremy R. Freimund, P.H.; Water Resources Manager; jeremyf@lummi-nsn.gov; 360-312-2314
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Monitoring Dates:	Sept. 23, 2013 to October 29, 2013.

INTRODUCTION

The purpose of this Year 1 Monitoring Report is to document the monitoring results for the enhancement activities conducted during 2012 for Phase 1A of the Lummi Nation Wetland and Habitat Mitigation Bank (Bank). Phase 1A is located at the Nooksack Delta Site. A 2012 As-Planted Report, which documents the enhancement activities conducted during 2012, was submitted to the Interagency Review Team (IRT) during September 2014. The Year 1 Monitoring of the 2012 enhancement activities was conducted during the fall of 2013.

This monitoring report is part of the documentation required to demonstrate attainment of the performance standards established in the Mitigation Banking Instrument (MBI). The IRT must review and approve the documentation as a condition of awarding and releasing additional Bank credits. The IRT award of credits will be reflected in a letter issued using IRT letterhead and signed by the IRT Chair (i.e., the U.S. Army Corps of Engineers, District Engineer or his/her designee).

Documentation of the Baseline Vegetation Conditions of the Nooksack Delta Site – Phase 1A was completed in December 2010 and accepted by the IRT. Because of the limited planting window and anticipation that the MBI would be executed during the second quarter of 2011, enhancement activities were initiated during the first quarter of 2011. Although the MBI was not executed until July 6, 2012, the IRT stated that the December 2010 Baseline Vegetation Conditions report would be the basis for evaluating attainment of the performance standards identified in the MBI.

The overall monitoring and reporting schedule for the Bank development period is shown in Table 1. Monitoring and reporting will be conducted for 10 years for each stage of the Bank development, beginning with Year 0 for each treatment area completed. The Year 0 report is in the form of an “As-Planted Report”. Because of the large area where enhancement activities are occurring, it is not possible to treat all areas within a single year. Consequently, treatment is occurring in stages. Treatment in all areas was expected to take 4 years (i.e., 4 stages); therefore, the overall schedule was expected to extend for 14 years. Monitoring reports for the earlier stages of the Phase 1A site development will continue beyond Year 10 until Year 10 is reached for the latest planting stage.

Table 1. Phase 1A Monitoring and Reporting Schedule

Action	Year ¹										
	0	1	2	3	4	5	6	7	8	9	10
Monitor Reed Canarygrass and Yellow Flag Iris and Shrub Plantings	x ²	x		x		x		x			x
English Ivy	x ²	x		x		x		x			x
Monitor Knotweed	x ²	x	x	x	x	x	x	x	x	x	x
Monitor Conifer Underplantings	x ²	x		x		x		x			x
Monitoring Reports	As-planted report ²	x	x	x	x	x		x			x

¹ Monitoring and reporting will be conducted for 10 years for each stage of the Bank development beginning with Year 0 for each treatment area completed. Treatment in all areas is expected to take at least 4 years; therefore the overall schedule will extend for at least 14 years. As described below, monitoring reports for the earlier stages of the Phase 1A site development will continue beyond Year 10 until Year 10 is reached for the latest planting stage.

² Documentation of enhancement actions (“As-Planted Reports”).

PHASE 1A DESIGN PLAN SUMMARY

The enhancement design for the Phase 1A Nooksack Delta Site is focused on (1) removing and managing invasive plant species; and (2) increasing native plant species richness through planting native shrubs and coniferous trees. Following the weed control effort and plantings, the primary work on the site will involve monitoring and maintenance activities.

The Nooksack Delta Site Phase 1A enhancement design is comprised of the following elements in the general sequence that they will occur:

1. Designate and protect the land within the site through a conservation easement;
2. Eradicate or control invasive species;
3. Plant native conifer species within the deciduous forests; and
4. Monitor effectiveness of treatments and underplantings, and repeat as needed to meet performance standards.

The mitigation bank locations in Phase 1A where enhancement activities occurred during 2012 and that were monitored during 2013 (Year 1) are shown on Figure 1 through

Figure 3. Specific design elements for the enhancement areas are summarized in Table 2 and further described below.

Table 2. Phase 1A Enhancement Actions Completed in 2012

Type of Wetland Enhancement Action	Area (acres)
Knotweed removal: treatment and monitoring area	0
Weed removal/willow planting: reed canarygrass, yellow flag iris	29.9
Weed removal: English ivy	0
Conifer underplanting	50.5
Total 2012 Enhancement Area	80.4

BANK OBJECTIVES AND PERFORMANCE STANDARDS

The Bank's success will be measured by documenting progress toward achieving the objectives and associated performance standards identified in the MBI. The prescribed performance standards are intended to measure the success of the ecological restoration and enhancement efforts at the Bank. Only the Phase 1A performance standards related to the work performed in 2012 (Year 0 for this stage) are described below.

Objective 1: Permanently protect aquatic ecosystem functions of the Nooksack Delta Site by instituting the MBI and implementing a conservation easement with permanent funding for site stewardship.

Performance Standard: The conservation easement and financial assurances are included in the MBI. The IRT approved the MBI on July 6, 2012 and the Conservation Easement was approved by all parties and recorded on October 17, 2012. The IRT released 19 mitigation bank credits on October 18, 2012.

Objective 2: Enhance ecological function by removing and managing reed canarygrass and yellow flag iris and replanting with native shrubs.

Performance Standard 2B: Areal cover of native shrubs in treatment area (shrub patches) at least 10% by Year 1. Visual estimates of plant cover within 5% of the treatment areas (shrub patches) and photographs of each patch sampled.

Objective 4: Enhance long-term forested wetland ecological function and habitat for federally listed fish species (Chinook, steelhead, and bull trout) by planting conifers beneath deciduous trees in the existing forested areas and along the many stream channels.

Performance Standard: 4B: A minimum of 220 living trees per acre by August-September of Year 1. Tree density will be estimated by counting live trees within permanent “belt” transects. Sample size will include at least 5% of total area planted for each planting year.

YEAR 1 (2013) MONITORING OF PHASE 1A AREAS ENHANCED IN 2012

The areas where enhancement actions were completed in 2012 are shown on Figure 1 and summarized in Table 2. Work completed in 2012 included removal of reed canarygrass and yellow flag iris, planting of willow stakes, and underplanting with conifers.

Reed Canarygrass/Yellow Flag Iris Treatment and Willow Plantings

Work completed during 2012 included 29.9 acres of reed canarygrass treatment and willow plantings. Willows were planted within 679 plots each measuring approximately 20 feet in diameter. The locations for the plots planted with willow stakes in 2012 were established in a grid pattern with 40-foot on center spacing using a Geographic Information System (GIS). The latitude and longitude of each plot was then loaded from the GIS into a mapping grade, hand-held global positioning system (GPS) unit with a horizontal accuracy of ± 2 feet (Trimble GeoXT 6000). The GPS unit was used to locate the plot centers in the field. Each plot was designated with a unique identifier (WP001 – WP753) for data tracking purposes and a wood lathe with the unique identifier written on it was used to mark the plot center. Survey flagging was attached to the wood lathe to help field locate the plot centers.

Three species of willow stakes were planted: Pacific (*Salix lasiandra*), Sitka (*S. sitchensis*), and Hooker’s (*S. hookeriana*). Stake spacing averaged 2 to 3 feet on center (approximately 57 stems per plot or 1,425 stems per acre).

A total of 37,791 willow stakes were planted within 679 plots during 2012 over the April 16 through May 15, 2012 period. Following the planting season, a GIS was used to draw a polygon around the planted plot locations, which had been located in the field using the GPS. Using this approach, the overall treatment area for 2012 was determined to be 29.9 acres. For comparison/validation purposes, at a planting density of approximately 1,425 stems per acre the 37,791 willow stakes would be enough to treat approximately 26.5 acres. Similarly, at an average planting density of 25 plots per acre, the 679 plots equates to a treatment area of 27.16 acres. In some of the plots, the planting density was reduced due to unsuitable planting conditions (e.g., large woody debris, deep holes/excessive water depth) encountered in the field. In some of the plots the planting density was reduced because some portion of the plot was dominated with healthy native wetland plants (Typhaceae, Cyperaceae, or Myrica).

Monitoring of the willow patches was conducted at 35 randomly selected plots covering 5% of the total number of plots. Plots selected for sampling are shown in orange in Figure 2. Five photographs were taken at each sample plot during the Year 1 Monitoring

effort during 2013 to document changes in shrub cover over time for the enhancement activities conducted during 2012. One photograph from each of the sample plots is provided in Appendix A.

Monitoring results will be compared with performance standards described in Table C.2 of the MBI.

Aerial Shrub Cover within Willow Plots

Performance standards for the willow planting plots include at least 10% areal coverage by native shrubs within planted plots in Year 1 (which was during 2013 for the 2012 enhancement activities). At each of the 35 randomly selected plots, the cover provided by native willows was visually estimated. Two staff members made estimates of aerial cover and compared estimates. The average of the two estimates was recorded.

Results of the aerial coverage estimates are shown in Table 3. Shrub cover was estimated to average 5.4% with a standard error (SE) of 1.52 over the 35 plots monitored at the end of the Year 0 (2012) growing season. Only five of the plots were estimated to have 10% or greater shrub cover at the end of the Year 0 growing season. At the end of the Year 1 growing season, seven of the plots were estimated to have 10% or greater shrub cover. The average coverage provided by native shrubs over all 35 sample plots increased from 5.4% (SE 1.52) in Year 0 to 6.7% (SE 0.793) in Year 1. The modest increase in cover is the result of some willow stakes dying between years. The 6.7% cover estimate does not meet the performance standard of 10% by Year 1 as described in the MBI.

Although growth was vigorous on many of the live willow stems, growth was also vigorous for the reed canary grass and many dead willow stems were observed within the sampled plots. Evidence of bark browsing (probably due to voles) was observed on many of the dead stems. Stems drying prior to planting or dry conditions during the summer establishment period may also have contributed to stem death, which resulted in a decrease in shrub cover. Replanting of some willow plots was determined to be necessary in order to meet Year 3 performance standards of 20% shrub cover.

Table 3. Willow Aerial Coverage – 2012 Plantings (5% of total shrub plots)

Station Identifier	Shrub Cover Year 0 (%)	Shrub Cover Year 1 (%)
WP0012	5	7
WP0036	2	4
WP0038	2	5
WP0054	5	18
WP0127	2	6
WP0155	22	7
WP0171	2	5
WP0174	5	9
WP0198	15	7
WP0221	2	2
WP0229	2	1
WP0272	2	13
WP0282	2	2
WP0333	1	1
WP0351	10	15
WP0353	2	2
WP0379	2	6
WP0463	4	7
WP0726	5	6
WP0750	2	6
WP0873	1	4
WP0882	2	7
WP1009	2	8
WP1034	2	4
WP1053	2	4
WP1080	2	6
WP1106	5	14
WP1109	10	20
WP1124	2	10
WP1164	?	?
WP1166		0
WP1167	2	4
WP1179	2	4
WP1193	5	12

Station Identifier	Shrub Cover Year 0 (%)	Shrub Cover Year 1 (%)
WP1200	5	6
Average	5.4	6.7

Diameter of Willow Plots

Performance standards for the willow planting plots also include an increase in the diameter of the plot in later years (Year 7 and Year 10). In order to provide a basis of comparison for the future diameter of the plots, the diameter of the plots was measured in the fall of the year the enhancement activity occurred (i.e., Year 0). Three measurements of the plot diameter were made at each sample plot and averaged for each plot. Diameter measurements were taken near the end of the growing season (October) using a fiberglass tape stretched through the center of the plot (marked with wood lath). Measurements were made from the outermost portion of the willow stems. The mean diameter for each individual plot will be the baseline used to compare with the mean diameter that will be measured in Year 7 and Year 10.

Performance standards for Year 7 include a 10% minimum increase in plot diameter for at least one-quarter of the plots. Although performance standards for plot diameter are not required for Year 1, the diameters were measured to provide information on whether plot growth is on a positive trajectory toward achieving performance standards in later years. As summarized in Table 4, the average plot diameter in Year 1 remained essentially unchanged (-0.1%) at all plots over the average diameter measured during 2012 (Year 0). The change in plot diameters ranged from -100% where complete die off of willows occurred to 63% increase in diameter. Five of the plots already meet the Year 7 target diameter.

Table 4. Willow Plots Diameter – Year 1 of 2012 Plantings (5% of total shrub plots)

Station Name	Mean Diameter in Year 0 (ft)	Mean Diameter in Year 1 (ft)	Year 1 (% Change)	Target Diameter (+10%) by Year 7 (ft)
WP0012	21.1	22.1	5	23.2
WP0036	15.1	16.6	10	16.7
WP0038	21.5	20.8	-3	23.7
WP0054	20.5	20.8	1	22.6
WP0127	20.4	20.2	-1	22.5
WP0155	18.2	19.8	9	20.0
WP0171	18.8	15.8	-16	20.7
WP0174	21.4	22.1	3	23.5
WP0198	19.2	19.9	3	21.1
WP0221	11.9	9.2	-23	13.1
WP0229	11.9	0.0	-100	13.1
WP0272	17.5	20.6	18	19.3
WP0282	19.4	18.9	-2	21.3
WP0333	14.7	0.0	-100	16.1
WP0351	20.4	22.6	10	22.5
WP0353	18.1	7.6	-58	20.0
WP0379	21.8	22.1	1	24.0
WP0463	23.4	23.8	2	25.8
WP0726	20.4	20.0	-2	22.4
WP0750	21.3	18.2	-15	23.4
WP0873	11.6	19.0	63	12.8
WP0882	20.3	21.1	4	22.3
WP1009	20.4	22.7	11	22.4
WP1034	19.3	19.2	-1	21.3
WP1053	21.2	19.5	-8	23.3
WP1080	22.0	17.4	-21	24.2
WP1106	22.0	22.6	3	24.2
WP1109	20.9	21.1	1	23.0
WP1124	21.3	21.0	-1	23.4
WP1164	17.9	0.0	N/A	19.7
WP1166	17.9	0.0	N/A	19.7
WP1167	17.8	16.7	-6	19.5
WP1179	20.5	20.4	-1	22.6
WP1193	22.5	21.6	-4	24.7

Station Name	Mean Diameter in Year 0 (ft)	Mean Diameter in Year 1 (ft)	Year 1 (% Change)	Target Diameter (+10%) by Year 7 (ft)
WP1200	21.4	20.3	-5	23.5
Average			-0.1	--

Conifer Underplanting

50.5 acres of existing deciduous forest was underplanted with conifers during 2012. Thirty-nine 6-foot wide belt transects were established throughout the planting area to sample the plantings. The belt transects represent 0.8 acres of area. Results of the Year 0 sampling showed that trees were planted at a density of 587 trees per acre (standard error of 34). The mean height of the 463 trees that were measured was 2.23 ft at the end of Year 0. At the end of Year 1, sampling showed that the average density of conifer plantings was reduced to 384 trees per acre (standard error of 31) within the 39 belt transects. The mean height of the 300 trees that were measured during the Year 1 monitoring was 2.02 ft.

SUMMARY

The enhancement actions taken in 2012 (willow plantings and conifers) were monitored during the fall 2013 to determine if performance standards for Year 1 were met. The results of monitoring show that the shrub planting plots did not meet the 10% cover performance standard for Year 1. The failure of some willow stakes planted in 2012 may be the result of many factors, many of which (herbivory from voles and beaver) are difficult to control in a remote setting. The willow plots planted in 2012 were revisited in the spring 2014 and any that appeared to have significant die-off of the original willow stakes were be replanted. The contractor who conducted the plantings during 2012 was not retained for the 2013 enhancement season. The new planting contractor committed to using additional care to ensure the use of fresh, healthy willow stakes and ensuring that the stakes are kept moist and planted promptly. The average diameter of the willow plots remained unchanged over the baseline measurements; therefore some replanting will likely be needed to keep on track to meet performance standards in later years.

The results of enhancement actions and monitoring are being tracked using a custom-built database. An example of the summary information reported by the database is included in Appendix C.

Figures

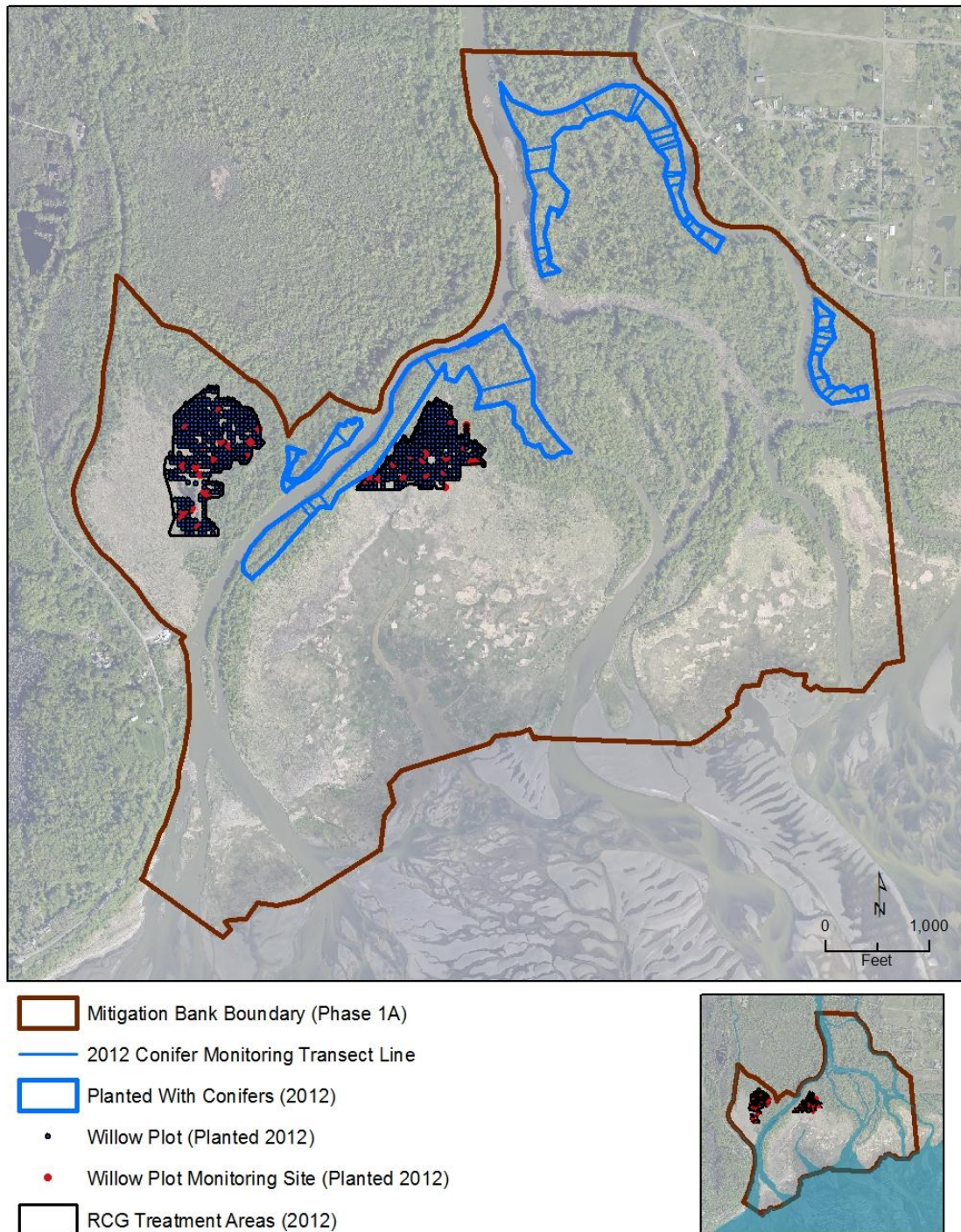
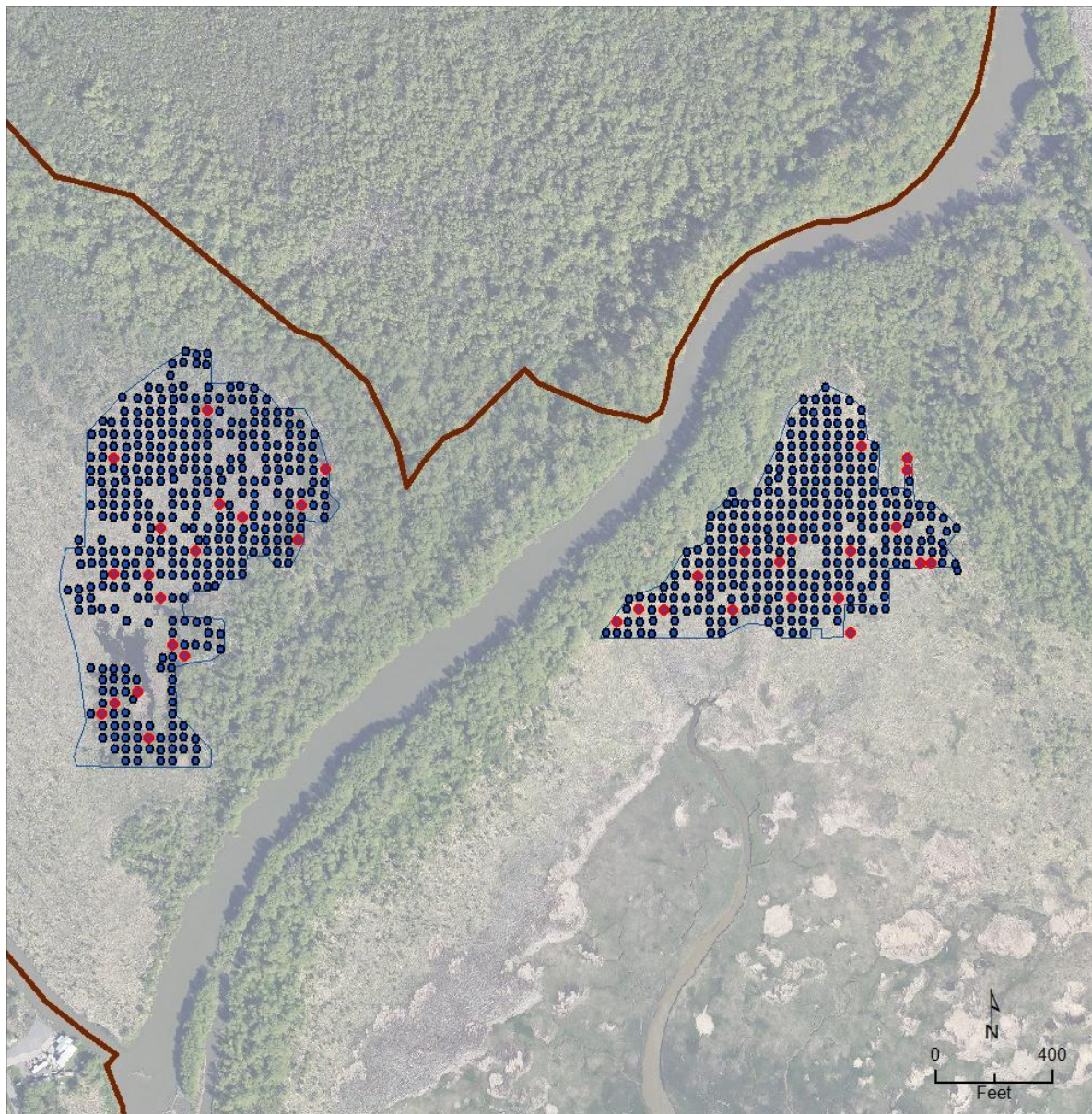


Figure 1. Phase 1A 2012 Enhancement Areas Monitored during 2013.



- Mitigation Bank Boundary (Phase 1A)
- 20' dia. Willow Plot Locations**
- 2012 Plot
- 2012 Monitoring Site
- RCG Treatment Areas (2012)

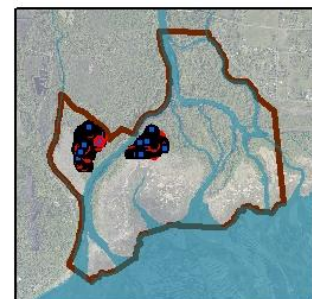


Figure 2. 2012 Reed Canarygrass/Yellow Flag Iris Treatment and Willow Plantings Monitored during 2013 (Phase1A)

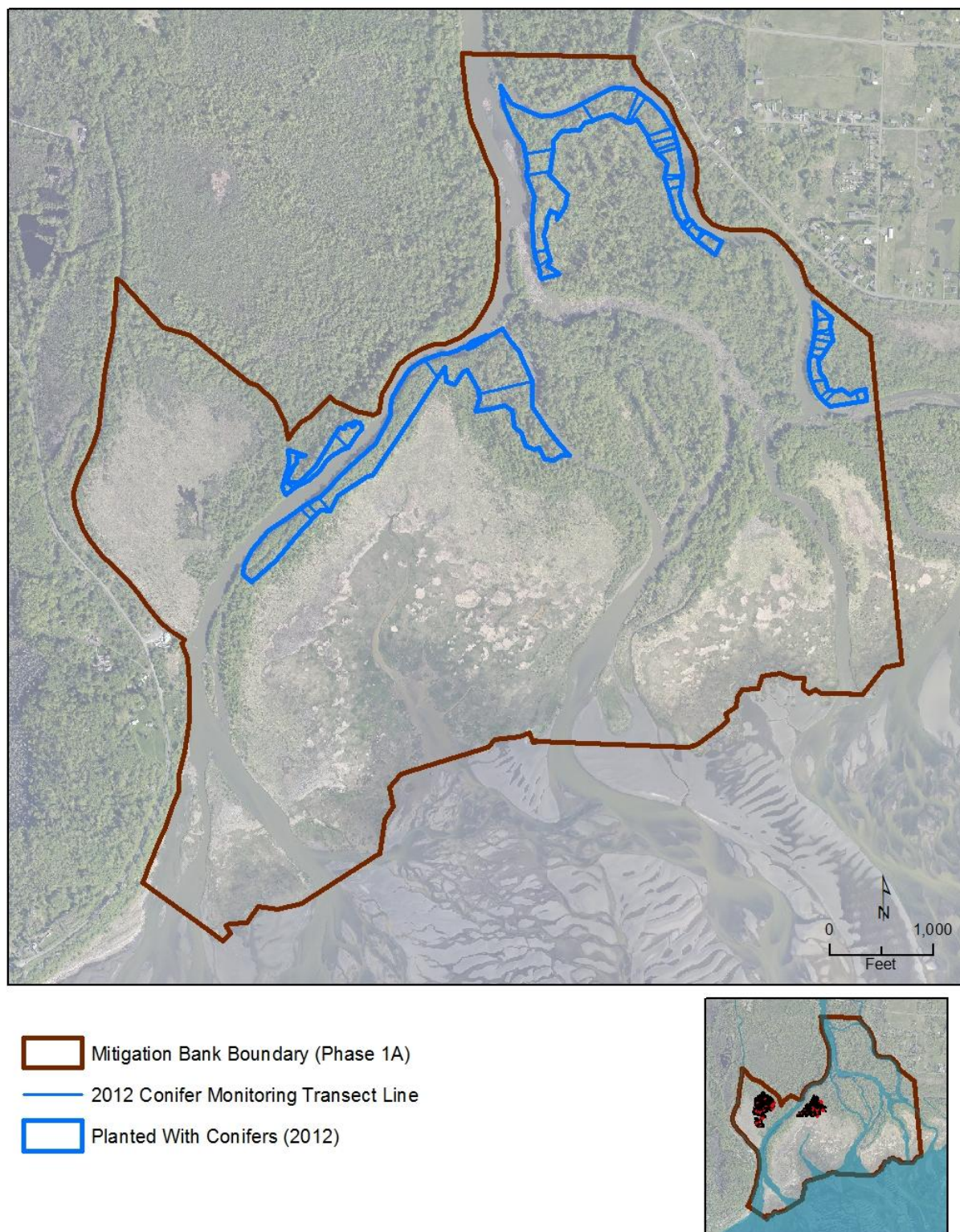









Figure 3. 2012 Conifer Underplanting Areas and Monitoring Transect Locations during 2013




APPENDIX A: Photographs of Willow Plots





(End of Year 1)





(Photographs taken in September 2013 from south end of sample plots facing north and show willows planted in 2012.)





Station Identifier	Image
WP0012	
WP0036	
WP0038	


WP0054	
WP0127	
WP0155	
WP0171	





WP0174	
WP0198	
WP0221	
WP0229	




WP0272	
WP0282	
WP0333	
WP0351	

WP0353	
WP0379	
WP0463	
WP0726	

WP0750	
WP0873	
WP0882	
WP1009	

WP1034	
WP1053	
WP1080	
WP1106	

WP1109	
WP1124	
WP1164	
WP1166	





WP1167	
WP1179	
WP1193	
WP1200	





APPENDIX B: Photographs of Conifer Underplanting





(End of Year 1)





(Photographs taken in September and October of 2013 of conifers planted in 2012. All photographs are from the center of the transect.)





Transect	Photo of Center of Station
CT001	
CT002	
CT003	

CT004	 A photograph showing a light-colored tree trunk in a wooded area. The ground is covered with green leaves and some fallen branches.
CT005	 A photograph of dense green foliage, likely a shrub or small tree, with many leaves visible.
CT006	 A photograph showing a tree trunk and surrounding vegetation, including green leaves and some bare branches.
CT007	 A photograph showing a tree trunk and surrounding vegetation, including green leaves and some bare branches.





CT008	 A photograph of a forest interior. The ground is covered with fallen leaves and some white sticks or debris. A person wearing a green shirt and dark pants is visible in the background, standing among the trees.
CT009	 A photograph of a forest interior. A person wearing a light-colored shirt and dark pants is visible on the left side, standing near a tree. The forest is dense with green foliage.
CT010	 A photograph of a forest interior. The scene is filled with dense green foliage and trees, with a path or clearing visible in the center.
CT011	 A photograph of a forest interior. The scene shows many thin, vertical tree trunks and dense green foliage, with a path or clearing visible in the center.





CT012	
CT013	
CT014	
CT015	





CT016	
CT017	
CT018	
CT019	

<p>CT020</p>	
<p>CT021</p>	
<p>CT022</p>	
<p>CT023</p>	

CT024	NO PHOTOS?
CT025	 A photograph showing a person wearing a hat and a light-colored shirt, standing in a forest and looking down at a field notebook. The person is surrounded by trees and dense vegetation. A blue flag is visible in the background.
CT026	 A photograph of a forest floor covered with fallen brown leaves and some green plants. A tree trunk is visible on the left side of the frame.
CT027	 A close-up photograph of green leaves and branches, likely from a tree or shrub, showing some detail of the foliage.

CT028	 A photograph of a wooded area with dense green foliage. A blue flag is tied to a branch on the left side of the frame.
CT029	 A photograph of a wooded area with green leaves and a fallen branch in the foreground.
CT030	 A photograph of a wooded area with a blue flag and a fallen log in the foreground.
CT031	 A photograph of a wooded area with a blue flag and a tree trunk in the foreground.

CT032	 A photograph showing a blue survey flag with a white top, partially obscured by green foliage and branches in a wooded area.
CT033	 A photograph of a tree trunk in a forest, surrounded by green leaves and branches. The ground is covered with fallen leaves.
CT034	 A photograph of a tree trunk in a forest, surrounded by green leaves and branches. The ground is covered with fallen leaves.
CT035	 A photograph of a tree trunk in a forest, surrounded by green leaves and branches. The ground is covered with fallen leaves.

CT036	
CT037	
CT038	
CT039	 <p>End looking back.</p>

APPENDIX C: Monitoring Database Summary Report Form

Lummi Nation Wetland and Habitat Mitigation Bank



Phase 1A Status Report

Nooksack Delta

Acres Planted/Treated in Phase 1A / Nooksack Delta

Making Willow Patches

2011:	2012:	2013:	2014:	2015:	2016:	2017:	2018:	2019:	2020:	2021:	2022:	2023:	2024:	2025:	2026:	2027:	2028:	2029:	2030:	2031:
29.7	29.9	0.8	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Underplanting with Conifers

2011:	2012:	2013:	2014:	2015:	2016:	2017:	2018:	2019:	2020:	2021:	2022:	2023:	2024:	2025:	2026:	2027:	2028:	2029:	2030:	2031:
0.0	50.5	17.0	24.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Acres Monitored in Belt Transects in Phase 1A / Nooksack Delta

Total Acres Monitored in Belt Transects By Stage and Year

	M0:	M1:	M3:	M5:	M7:	M10:
2012	0.796	0	0	0	0	0
2013	0.281	0.796	0	0	0	0
2014	0.329	0.281	0	0	0	0
	1.4	1.1	0	0	0	0

Conifer Heights Monitored in Belt Transects in Phase 1A / Nooksack Delta

Tree Height Statistics by Monitoring Stage

Stage:	Mean Height (ft)	Std.Err.	Trees Measured:
Baseline	2.3	0.02	603
M1	2.1	0.03	357

Conifer Densities Monitored in Belt Transects

Conifer Densities (Trees per Acre) by Monitoring Stage

Stage:	Mean ConiferDensity:	StdErr:	Transects:
Baseline	461.60	30.97	68
M1	320.80	25.95	62

Ivy Cover Monitored in Ivy Plots in Phase 1A / Nooksack Delta

Ivy Percent Cover in Plots by Monitoring Stage

Stage:	Mean Cover (%)	Std.Err.	Plots Monitored:
Baseline	30.35	8.88	17
M1	10.82	5.46	17
M3	12.94	6.02	17

Ivy Cover Monitored in Ivy Line-Intercept Stations in Phase 1A / Nooksack Delta

Ivy Percent Cover in Line-Intercept Stations by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Lines Monitored:
Baseline	42.745	28.65	5
M1	35.558	31.871	5
M3	39.012	30.146	5

Native Plant Cover Monitored in Shrub Patches in Phase 1A / Nooksack Delta

Native Plant Percent Cover in Plots by Monitoring Stage				
Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:	Precision:
Baseline	11.62	1.281	88	21.6
M1	5.55	0.527	73	18.6
M3	37.73	2.357	37	12.2

Average Patch Diameters Monitored in Shrub Patches in Phase 1A / Nooksack Delta

Percentage of Patches Exceeding Original Diameter by 10%			
Stage:	% Exceeding	% Not Exceeding	Total Patches:
Baseline	0.0	100.0	88
M1	6.8	93.2	74
M3	35.1	64.9	37

Individual Monitoring Zones in Phase 1A / Nooksack Delta

2011 Ivy Management Zone

Ivy Percent Cover in Plots by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:
Baseline	30.4	8.88	17
M1	10.8	5.46	17
M3	12.9	6.02	17

Ivy Percent Cover in Line-Intercept Stations by Monitoring Stag

Stage:	MeanCoverage (%)	Std.Err.	Lines Monitored:
Baseline	42.7	28.65	5
M1	35.6	31.671	5
M3	39.0	30.146	5

2011 Reed Can Grass Control Zone

Native Plant Percent Cover in Plots by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:
Baseline	13.7	1.173	38
M1	4.5	0.673	37
M3	37.7	2.357	37

Percentage of Patches Exceeding Original Diameter by 10

Stage:	% Exceeding	% Not Exceeding	Total Patches:
Baseline	0.0	100.0	38
M1	0.0	100.0	37
M3	35.1	64.9	37

2012 Conifer Underplanting Zone

Total Acres Monitored in Belt Transects By Stage and Year

	M0:	M1:	M3:	M5:	M7:	M10:
2012	0.796	0	0	0	0	0
2013	0	0.796	0	0	0	0
	0.8	0.796	0	0	0	0

Tree Height Statistics by Monitoring Stage

Stage:	Mean Height (ft)	Std.Err.	Trees Measured:
Baseline	2.23	0.02	463
M1	2.02	0.04	300

Conifer Densities (Trees per Acre) by Monitoring Stage

Stage:	Mean ConiferDensity:	StdErr:	Transects:
Baseline	586.83	34.39	39
M1	384.45	31.07	39

2012 Reed Can Grass Control Zone

Native Plant Percent Cover in Plots by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:
Baseline	5.4	1.524	35
M1	6.7	0.793	35

Percentage of Patches Exceeding Original Diameter by 10

Stage:	% Exceeding	% Not Exceeding	Total Patches:
Baseline	0.0	100.0	37
M1	13.9	86.1	36

2013 Conifer Underplanting Zone

Total Acres Monitored in Belt Transects By Stage and Year

	M0:	M1:	M3:	M5:	M7:	M10:
2013	0.281	0	0	0	0	0
2014	0	0.281	0	0	0	0
	0.3	0.281	0	0	0	0

Tree Height Statistics by Monitoring Stage

Stage:	Mean Height (ft)	Std.Err.	Trees Measured:
Baseline	2.28	0.05	95
M1	2.25	0.08	57

Conifer Densities (Trees per Acre) by Monitoring Stage

Stage:	Mean ConiferDensity:	StdErr:	Transects:
Baseline	335.53	42.74	23
M1	212.79	36.91	23

2013 Reed Can Grass Control Zone

Native Plant Percent Cover in Plots by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:
Baseline	3.0	0	1
M1	1.0	0	1

Percentage of Patches Exceeding Original Diameter by 10

Stage:	% Exceeding	% Not Exceeding	Total Patches:
Baseline	0.0	100.0	1
M1	0.0	100.0	1

2014 Conifer Underplanting Zone

Total Acres Monitored in Belt Transects By Stage and Year

	M0:	M1:	M3:	M5:	M7:	M10:
2014	0.329	0	0	0	0	0
	0.3	0	0	0	0	0

Tree Height Statistics by Monitoring Stage

Stage:	Mean Height (ft)	Std.Err.	Trees Measured:
Baseline	2.35	0.08	45

Conifer Densities (Trees per Acre) by Monitoring Stage

Stage:	Mean ConiferDensity:	StdErr:	Transects:
Baseline	131.39	45.11	6

2014 Reed Can Grass Control Zone

Native Plant Percent Cover in Plots by Monitoring Stage

Stage:	MeanCoverage (%)	Std.Err.	Plots Monitored:
Baseline	23.9	5.429	12

Percentage of Patches Exceeding Original Diameter by 10

Stage:	% Exceeding	% Not Exceeding	Total Patches:
Baseline	0.0	100.0	12